

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>			<b>Complete if Known</b>		
			Application Number	Not yet assigned	
			Filing Date	April 15, 2004	
			First Named Inventor	David Michael Young	
			Art Unit	Unknown	
			Examiner Name	Unknown	
Sheet	1	of	3	Attorney Docket Number	UF-174D4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number – Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
NN	U1	US-5,242,817	09/07/1993	Kelly <i>et al</i>	All
NN	U2	US-5,391,489	02/21/1995	Kelly <i>et al</i>	All
	U3				All
	U4				All

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>2</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
	F1					
	F2					
	F3					
	F4					
	F5					
	F6					
	F7					
	F8					
	F9					
	F10					
	F11					
	F12					

Examiner Signature	/Nashaat Nashed/ (10/17/2006)	Date Considered	
--------------------	-------------------------------	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	Not yet assigned	
			Filing Date	April 15, 2004	
			First Named Inventor	David Michael Young	
			Group Art Unit	Unknown	
			Examiner Name	Unknown	
Sheet	2	of	3	Attorney Docket Number	UF-174D4

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article, (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
NN	R1	ABRAHMSEN, L., et al. "Engineering subtilisin and its substrates for efficient ligation of peptide bonds in aqueous solution" <i>Biochemistry</i> (1991) 30:4151-4159.	
	R2	BLUMENTALS, I.I., et al. "Characterization of sodium dodecyl sulfate-resistant proteolytic activity in the hyperthermophilic Archaeobacterium <i>Pyrococcus furiosus</i> " <i>Appl. and Environ. Microbiol.</i> (1990) 56(7):1992-1998.	
	R3	BRENNAN, M.B. "Enzyme discovery heats up: enzymes that could maximize industrial processing reactions are reaped from exotic microorganisms" <i>C&amp;EN</i> (1996) October:31-33.	
	R4	CASTELLAN, G.W. "Physical Chemistry", (2 <sup>nd</sup> Edition), pp. 245-247; Addison-Wesley Publishing Comp., Reading, MA.	
	R5	CHANG, et al., "Protease I from <i>Pyrococcus furiosus</i> ", <i>Methods in Enzymology</i> (2001), 330:403-413.	
	R6	CHRISTENEN, U., et al. "Mechanism of carboxypeptidase-Y-catalyzed peptide symisynthesis" <i>Eur. J. Biochem.</i> (1992) 210:467-473.	
	R7	DE VOS, W.M., et al., "Purification, characterization, and molecular modelling of pyrolysin and other extracellular thermostable serine proteases from hyperthermophilic microorganisms", <i>Methods in Enzymology</i> (2001), 330:383-393.	
	R8	EGGEN, R., et al. "Characterization of pyrolysin, a hyperthermocactive serine protease from the Archaeobacterium <i>Pyrococcus furiosus</i> " <i>FEMS Microbiol. Lett.</i> (1990) 71:17-20.	
	R9	FERSHT, A. "Enzyme Structure and Mechanism" 2 <sup>nd</sup> Edition, W.H. Freeman and Company, New York, (1985) pp. 89-90.	
	R10	FIALA, G. AND STETTER, K.O. " <i>Pyrococcus furiosus</i> s. Nev. represents a novel genus of marine heterotrophic Archaeobacteria growing optimally at 100°" <i>Arch Microbiol.</i> (1986) 145:56-61.	
	R11	HALIO, S.B., et al. "Sequence, expression in <i>Escherichia coli</i> , and analysis of the gene encoding a novel intracellular protease (Pfpl) from the hyperthermophilic Archaeon <i>Pyrococcus furiosus</i> " <i>J. Bacteriol.</i> (1996) 178(9):2605-2612.	
	R12	JENCKS W.P. "Catalysis in Chemistry and Enzymology" Dover Publication, Inc., New York, (1987) pp. 312-313.	
NN	R13	NAKATSUKA, T. et al., "Peptide segment coupling catalyzed by the semisynthetic enzyme thiolsubtilisin" <i>J. Am Chem. Soc.</i> (1987) 109:3808-3810.	

Examiner Signature	/Nashaat Nashed/ (10/17/2006)	Date Considered	
--------------------	-------------------------------	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard T.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	Not yet assigned	
			Filing Date	April 15, 2004	
			First Named Inventor	David Michael Young	
			Group Art Unit	Unknown	
			Examiner Name	Unknown	
Sheet	3	of	3	Attorney Docket Number	UF-174D4

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article, (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T <sup>2</sup>
NN	R14	PETKOV, D.D. "Enzyme peptide synthesis and semisynthesis: kinetic and thermodynamic aspects" <i>J. Thero. Biol.</i> (1982) 98:419-425.		
NN	R15	STETTER, K.O. "Microbial life in hyperthermal environments" <i>ASM News</i> (1995) 61(6):285-290.		
NN	R16	STETTER, K.O., <i>et al.</i> , "Hyperthermophilic microorganisms", <i>FEMS Microbiol. Rev.</i> (1990), 75:117-124.		
NN	R17	VOORHORST, W. <i>et al.</i> "Isolation and characterization of the hyperthermostable serine protease, pyrolysin, and its gene from the hyperthermophilic Archaeon <i>Pyrococcus furiosus</i> " <i>J. Biol. Chem.</i> (1996) 271(34):20426-20431.		
NN	R18	VOORHORST, W.G.B., <i>et al.</i> "Homology modeling of two subtilisin-like serine proteases from the hyperthermophilic Archaea <i>Pyrococcus furiosus</i> and <i>Thermococcus stetteri</i> " <i>Protein Engineering</i> (1997) 10(8):905-914.		
NN	R19	WOESE, C.R., <i>et al.</i> , "Towards a natural system of organisms : proposal for the domains Archaea, Bacteria, and Eucarya", <i>Proc. Natl. Acad. Sci. USA</i> (1990) 87:4576-4579.		
	R20			
	R21			
	R22			
	R23			

Examiner Signature	/Nashaat Nashed/ (10/17/2006)	Date Considered	
--------------------	-------------------------------	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard T.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.